

## CLAIMS

1. A reflector antenna device, comprising:

an auxiliary reflector that receives an electric wave radiated from an opening portion by a primary radiator and reflects the electric wave; and

a main reflector that receives the electric wave that is reflected by the auxiliary reflector and radiates the electric wave to a space,

characterized in that the configurations of the auxiliary reflector and the main reflector are designed such that an electric power in an area of the main reflector where the auxiliary reflector is projected on the main reflector in parallel with the radiating direction of the electric wave due to the main reflector is equal to or lower than a predetermined first threshold value, and a radiation pattern of the antenna which is determined by the area of the main reflector other than the area has a desired characteristic.

2. A reflector antenna device, comprising:

an auxiliary reflector that receives an electric wave radiated from an opening portion by a primary radiator and reflects the electric wave; and

a main reflector that receives the electric wave that is reflected by the auxiliary reflector and radiates the electric wave

to a space,

characterized in that the configurations of the auxiliary reflector and the main reflector are designed such that an electric power on the opening portion of the primary radiator is equal to or lower than a predetermined second threshold value, and a radiation pattern of the antenna which is determined by another area of the main reflector other than an area of the main reflector where the auxiliary reflector is projected on the main reflector in parallel with the radiating direction of the electric wave due to the main reflector has a desired characteristic.

3. A reflector antenna device, comprising:

an auxiliary reflector that receives an electric wave radiated from an opening portion by a primary radiator and reflects the electric wave; and

a main reflector that receives the electric wave that is reflected by the auxiliary reflector and radiates the electric wave to a space,

characterized in that the configurations of the auxiliary reflector and the main reflector are designed such that an electric power in an area of the main reflector where the auxiliary reflector is projected on the main reflector in parallel with the radiating direction of the electric wave due to the main reflector is equal to or lower than a predetermined first threshold value, an electric

power on an opening portion of the primary radiator is equal to or lower than a predetermined second threshold value, and a radiation pattern of the antenna which is determined by the area of the main reflector other than the area has a desired characteristic.

4. A reflector antenna device according to any one of claims 1 to 3, characterized in that an electric wave absorbing member for absorbing the electric wave is disposed on a peripheral portion of the opening portion of the primary radiator.

5. A reflector antenna device according to any one of claims 1 to 4, characterized in that an electric wave absorbing member for absorbing the electric wave is disposed on a side surface of the primary radiator.

6. A reflector antenna device according to any one of claims 1 to 5, characterized in that an electric wave absorbing member for absorbing the electric wave is disposed on the area of the main reflector where the auxiliary reflector is projected on the main reflector in parallel with the radiating direction of the electric wave due to the main reflector.

7. An antenna device according to any one of claims 1 to 5, characterized in that a metal plate for reflecting an electric

wave that arrives in the area of the main reflector where the auxiliary reflector is projected on the main reflector in parallel with the radiating direction of the electric wave due to the main reflector in a direction other than the direction of the auxiliary reflector is disposed on the area with a slope that is  $90^\circ$  or more and  $180^\circ$  or less with respect to the radiation direction of the electric wave.